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BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

Application Number: 09/904,077
Filing Date: July 12, 2001
Appellant(s): AARTS ET AL.

U.S. Philips Corporation
Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed December 19, 2005 appealing from the Office action mailed August 5, 2005.

(1) Real Party in Interest

A statement identifying by name the real party in interest is contained in the brief.

(2) Related Appeals and Interferences

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

(3) Status of Claims

The statement of the status of claims contained in the brief is correct.

This appeal involves claims 1-20.

(4) Status of Amendments After Final

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

(5) Summary of Claimed Subject Matter

The summary of claimed subject matter contained in the brief is correct.

(6) Grounds of Rejection to be Reviewed on Appeal

The appellant's statement of the grounds of rejection to be reviewed on appeal is correct.

(7) Claims Appendix

The copy of the appealed claims contained in the Appendix to the brief is correct.

(8) Evidence Relied Upon

No evidence is relied upon by the examiner in the rejection of the claims under appeal.

(9) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

Claim Rejections - 35 USC § 102

Claims 1-20 are rejected under 35 U.S.C. 102(b) as being anticipated by Schell et al. (US 6,058,081).

In regard to claim 1, Schell et al. disclose an optical scanning device (Figure 26) for scanning an information layer of an optically scannable information carrier, which scanning device is provided with a radiation source, an optical lens system (2-12) with an optical axis for focusing a radiation beam supplied, in operation, by the radiation source into a scanning spot on the information layer, and an actuator (Figure 26) by means of which the lens system can be displaced with respect to a stationary part of the scanning device at least in a direction parallel to the optical axis, the actuator being provided with an electric coil system (2-16, 2-18 & 2-20), which is arranged in a fixed position with respect to the lens system, and a magnetic system (2-22 & 2-24) which is arranged in a fixed position with respect to the stationary part, characterized in that the magnetic system, viewed parallel to an X-direction (Y in Figure 26) extending perpendicularly to the optical axis, is arranged in its entirety next to and outside the coil system, the magnetic system comprises a first part (2-22) and a second part (2-24) on opposite sides of the optical axis, the first part and the second part of the magnetic system each comprise at least a first and a second permanent magnet (see magnets labeled S→N and N←S), at least a part of the coil system being situated in a magnetic stray field of the magnetic system (see also Figure 32); and the coil system further comprises a portion of the coil system (2-16) situated symmetrically with respect to a junction of the first and the second magnet for both the first and second part of

the magnetic system, said portion being situated between a pair of portions of the coil system (2-18 & 2-20) arranged directly opposite, respectively, the first and second parts of the magnetic system such that the first and second part of the magnetic system extend entirely across the pair of portions of the coil system.

In regard to claim 2, Schell et al. disclose that the magnetic system comprises the first part (2-22) and the second part (2-24) which are each arranged, in their entirety, next to and outside the coil system near, respectively, a first side of the lens system and a second side of the lens system which, viewed in a direction parallel to the X-direction (Y in Figure 26), is opposite the first side, the pair of portions of the coil system having a first part (2-18) of the coil system arranged near the first side, and a second part (2-20) of the coil system arranged near the second side, being situated, at least partly, in a magnetic stray field (see also Figure 32) of, respectively, the first part and the second part of the magnetic system.

In regard to claim 3, Schell et al. disclose that the first part and the second part of the magnetic system, and the first part and the second part of the coil system, viewed in a direction parallel to the X-direction, are symmetrically arranged (as shown in Figure 26) with respect to the optical axis.

In regard to claim 4, Schell et al. disclose that the first and the second permanent magnet (Figure 26, magnets labeled S→N and N←S) which, viewed in a direction parallel to the optical axis are arranged next to each other and have a direction of magnetization extending, respectively, parallel to the X-direction and parallel to an X'-direction opposite to the X-direction, while the first part and the second part of the coil system each comprise at least an electric coil having a first part and a second part, which are provided with wire portions

extending perpendicularly to the X-direction and perpendicularly to the optical axis, said first and said second part of the coil of the first part of the coil system, viewed in a direction parallel to the X-direction, being arranged directly opposite, respectively, the first and the second magnet of the first part of the magnetic system, and said first and said second part of the coil of the second part of the coil system, viewed in a direction parallel to the X-direction, being arranged directly opposite, respectively, the first and the second magnet of the second part of the magnetic system.

In regard to claim 5, Schell et al. disclose that the first and the second permanent magnets (Figure 26, magnets labeled S→N and N←S) which, viewed in a direction parallel to the optical axis, are arranged next to each other and have a direction of magnetization extending, respectively, parallel to the X-direction and parallel to an X'- direction opposite to said X-direction, while the coil system comprises at least one electric coil having a first part and a second part, which are provided with wire portions extending perpendicularly to the X-direction and perpendicularly to the optical axis, said first part and said second part of the coil being arranged, viewed in a direction parallel to the X-direction, directly opposite, respectively, one of the two magnets of the first part of the magnetic system and one of the two magnets of the second part of the magnetic system.

In regard to claim 6, Schell et al. disclose that the X-direction (Y in Figure 26) extends transversely to an information track present on the information layer, and in that the first and the second permanent magnets which, viewed parallel to the optical axis, are arranged next to each other and have a direction of magnetization extending, respectively, parallel to the X-direction and parallel to the X'-direction opposite to the X-direction, while the coil system comprises an

electric coil having a first part and a second part, which are provided with wire portions extending perpendicularly to the X-direction and perpendicularly to the optical axis, said parts of the coil being arranged, viewed in a direction parallel to the optical axis, in a transition region of the two magnets (see also Figure 32) of, respectively, the first part and the second part of the magnetic system.

In regard to claim 7, Schell et al. disclose that the X-direction (Y in Figure 26) extends at least substantially parallel to an information track present on the information layer, and in that the first part and the second part of the coil system each comprise at least one further electric coil from said portion having a first part and a second part, which are provided with wire portions extending parallel to the optical axis, the first part and the second part of the further coil of the first part of the coil system, viewed in a direction parallel to the X-direction, being arranged directly opposite, respectively, the first magnet and a magnetizable part (Figure 28, element 2-80) of the first part of the magnetic system, which magnetizable part, viewed perpendicularly to the optical axis and perpendicularly to the X-direction, is situated next to the first magnet, and the first part and the second part of the further coil of the second part of the coil system, viewed in a direction parallel to the X-direction, being arranged directly opposite, respectively, the first magnet and a magnetizable part of the second part of the magnetic system, which magnetizable part, viewed perpendicularly to the optical axis and perpendicularly to the X-direction, is situated next to the first magnet.

In regard to claim 8, Schell et al. discloses an optical player comprising an optical scanning device (Figure 26, see claim 1 above for similar limitations) for scanning an information layer of an optically scannable information carrier, and a table (inherent: necessary

part for placing the carrier) which can be rotated about an axis of rotation, on which table the information carrier can be placed, said scanning device being provided with a radiation source, an optical lens system with an optical axis for focusing a radiation beam supplied, in operation, by the radiation source into a scanning spot on the information layer, and an actuator by means of which the lens system can be displaced with respect to a stationary part of the scanning device, at least in a direction parallel to the optical axis, and a displacement device (Figure 28, element 2-82) by which at least the lens system of the scanning device can be displaced, with respect to the axis of rotation, mainly in a radial direction.

In regard to claim 9, Schell et al. disclose an optical scanning device (Figure 26) having a radiation source providing a radiation beam, an optical lens system with an optical axis for focusing the radiation beam into a scanning spot on an information layer, and an actuator that can displace the lens system, the actuator being provided with an electric coil system (2-16, 2-18 & 2-20), which is arranged in a fixed position with respect to the lens system, and a magnetic system (2-22 & 2-24) which is arranged in a fixed position with respect to a stationary part, comprising: a first part (2-22) and a second part (2-24) to the magnetic system arranged on opposite sides of the optical axis, the first part and the second part of the magnetic system each comprise at least a first and a second permanent magnet (see magnets labeled S→N and N←S), at least a part of the coil system being situated in a magnetic stray field of the magnetic system (see also Figure 28); a portion of the coil system situated symmetrically with respect to a junction of the first and the second magnet for both the first and second part of the magnetic system, said portion being situated between a pair of portions of the coil system arranged directly opposite, respectively, the first and second part of the magnetic system such that the first and

second part of the magnetic system extend entirely across the pair of portions having wires extending perpendicular to the optical path; and the magnetic system, viewed parallel to an X-direction extending perpendicularly to the optical axis, is arranged is arranged in its entirety next to and outside the coil system.

In regard to claim 10, Schell et al. disclose the first part (2-22) and the second part (2-24) to the magnetic system which are each arranged next to and outside the coil system near a first side of the lens system and a second side of the lens system which is opposite the first side of the lens system; the pair of portions of the coil system having a first part (2-18) and a second part (2-20), the first part of the coil system arranged near the first side, and the second part of the coil system arranged near the second side.

In regard to claim 11, Schell et al. disclose that the first part and the second part of the magnetic system, and the first part and the second part of the coil system are symmetrically arranged (as shown in Figure 26) with respect to the optical axis.

In regard to claim 12, Schell et al. disclose that the first part and the second part of the magnetic system each comprise the first and the second permanent magnet (Figure 26, magnets labeled S→N and N←S) having respective directions of magnetization extending parallel to the X-direction and parallel to an X'-direction opposite to the X-direction, while the first part and the second part of the coil system each comprise at least an electric coil having a first part and a second part, which are provided with wire portions extending perpendicularly to the X-direction and perpendicularly to the optical axis, said first and said second part of the coil of the first part of the coil system, viewed in a direction parallel to the X-direction, being arranged directly opposite, respectively, the first and the second magnet of the first part of the magnetic system,

and said first and said second part of the coil of the second part of the coil system, viewed in a direction parallel to the X-direction, being arranged directly opposite, respectively, the first and the second magnet of the second part of the magnetic system.

In regard to claim 13, Schell et al. disclose that the first part and the second part of the magnetic system each further comprise the two permanent magnets (Figure 26, magnets labeled S→N and N←S) which, viewed in a direction parallel to the optical axis, are arranged next to each other and have a respective direction of magnetization parallel to the X-direction and parallel to an X'- direction opposite to said X-direction, while the coil system comprises at least one electric coil having a first part and a second part, which are provided with wire portions extending perpendicularly to the X-direction and perpendicularly to the optical axis, said first part and said second part of the coil being arranged, viewed in a direction parallel to the X-direction, directly opposite, respectively, one of the two magnets of the first part of the magnetic system and one of the two magnets of the second part of the magnetic system.

In regard to claim 14, Schell et al. disclose that the X-direction (Y in Figure 26) extends at least substantially parallel to an information track present on the information layer, and in that the first part and the second part of the coil system each comprise at least one further electric coil from said portion having a first part and a second part, which are provided with wire portions extending parallel to the optical axis, the first part and the second part of the further coil of the first part of the coil system being arranged directly opposite, respectively, the first magnet and a magnetizable part (Figure 28, element 2-80) of the first part of the magnetic system, which magnetizable part, viewed perpendicularly to the optical axis and perpendicularly to the X-direction, is situated next to the first magnet, and the first part and the second part of the

further coil of the second part of the coil system, viewed in a direction parallel to the X-direction, being arranged directly opposite, respectively, the first magnet and a magnetizable part of the second part of the magnetic system, which magnetizable part, viewed perpendicularly to the optical axis and perpendicularly to the X-direction, is situated next to the first magnet.

In regard to claim 15, Schell et al. disclose an optical player comprising an optical scanning device (Figure 26, see claim 1 above for similar limitations) for scanning an information layer of an optically scannable information carrier, and a table (inherent: necessary part for placing the carrier), which can be rotated about as axis of rotation, on which table the information carrier can be placed, said scanning device being provided with a radiation source, an optical lens system (2-12) with an optical axis for focusing a radiation beam supplied, in operation, by the radiation source into a scanning spot on the information layer, and an actuator by means of which the lens system can be displaced with respect to a stationary part of the scanning device, at least in a direction parallel to the optical axis, and a displacement device (Figure 28, element 2-82) by means of which at least the lens system of the scanning device can be displaced, with respect to the axis of rotation, mainly in a radial direction.

In regard to claim 16, Schell discloses an optical scanning device (Figure 26) having a radiation source providing a radiation beam, an optical lens system (2-12) with an optical axis for focusing the radiation beam into a scanning spot on an information layer, and an actuator (Figure 26) that can displace the lens system, the actuator being provided with an electric coil system (2-16, 2-18 & 2-20), which is arranged in a fixed position with respect to the lens system, and a magnetic system (2-22 & 2-24) which is arranged in a fixed position with respect to a stationary part, comprising: a first part (2-22) and a second part (2-24) to the magnetic system arranged on

opposite sides of the optical axis, the first part and the second part of the magnetic system each comprise at least a first and a second permanent magnet (see magnets labeled S→N and N←S), at least a part of the coil system being situated in a magnetic stray field of the magnetic system (see Figure 32); a portion (2-16) of the coil system situated symmetrically with respect to a junction of the first and the second magnet for both the first and second part of the magnetic system, said portion being situated between a pair of portions (2-18 & 2-20) of the coil system, said pair of portions being in a symmetrical arrangement in an area between the first and second part of the magnetic system such that the first and second part of the magnetic system extend entirely across the pair of portions in a plane parallel the optical axis; and the magnetic system, viewed parallel to an X-direction (Y in Figure 26) extending perpendicularly to the optical axis, is arranged in its entirety next to and outside the coil system.

In regard to claim 17, Schell et al. disclose that the pair of portions of the coil system contains wires extending perpendicular to the optical axis (for example, 2-58 in Figure 27).

In regard to claim 18, Schell et al. disclose that the pair of portions of the coil system contains wires extending parallel to the optical axis (for example, 2-56 in Figure 27).

In regard to claim 19, Schell et al. disclose the first part (2-22) and the second part (2-24) to the magnetic system which are each arranged next to and outside the coil system near a first side of the lens system and a second side of the lens system which is opposite the first side of the lens system; the pair of portions of the coil system having a first part (2-18) and a second part (2-20), the first part of the coil system arranged near the first side, and the second part of the coil system arranged near the second side.

In regard to claim 20, Schell et al. disclose that the first part and the second part of the magnetic system, and the first part and the second part of the coil system are symmetrically arranged with respect to the optical axis (as shown in Figure 26).

(10) Response to Arguments

a. The Appellant argues on, e.g., the first three lines of page 7, that the Schell et al. reference does not disclose or suggest a magnetic structure that extends entirely across the coil system. The Examiner notes that this is not the claimed language. The last two lines of claim 1 recite that "the first and second part of the magnetic system extend entirely across the pair of portions of the coil system". Therefore, the features upon which the Appellant relies are not recited in the rejected claims.

b. The Appellant argues on e.g., page 8, paragraph 3, that the Schell et al. reference does not disclose or suggest magnetic system elements that extend entirely across pair of portions of a coil system. In response to this, the Examiner maintains that Schell et al. disclose this claimed feature for the following reasons, and given two different interpretations.

First Interpretation

In regard to claim 1, Schell et al. disclose (see Figure 26 below) that the first and second part of the magnetic system (i.e., 2-22 is the first part and 2-24 is the second part) extend entirely across the pair of portions of the coil system (the "pair of portions" corresponding to elements 2-18 and 2-20). The first part (2-22) and the second part (2-24) of the magnetic system, when viewed in the Z direction

defined in Figure 26, clearly extend entirely across the pair of portions (2-18 & 2-20) of the coil system.

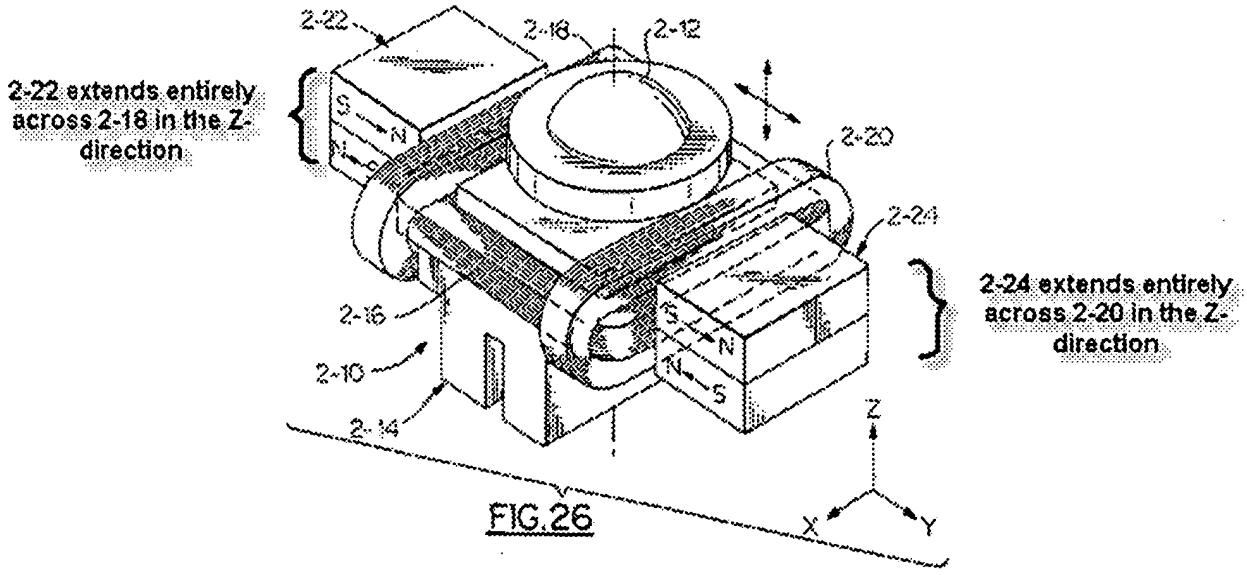


FIG.26

Second Interpretation

In regard to claim 1, Schell et al. disclose (see Figure 26 below) that the first and second part of the magnetic system (i.e., 2-22 is the first part and 2-24 is the second part) extend entirely across the pair of portions of the coil system (the "pair of portions" corresponding to segments of elements 2-18 and 2-20 that are within the length of elements 2-22 and 2-24, i.e., length in the X direction defined in Figure 26).

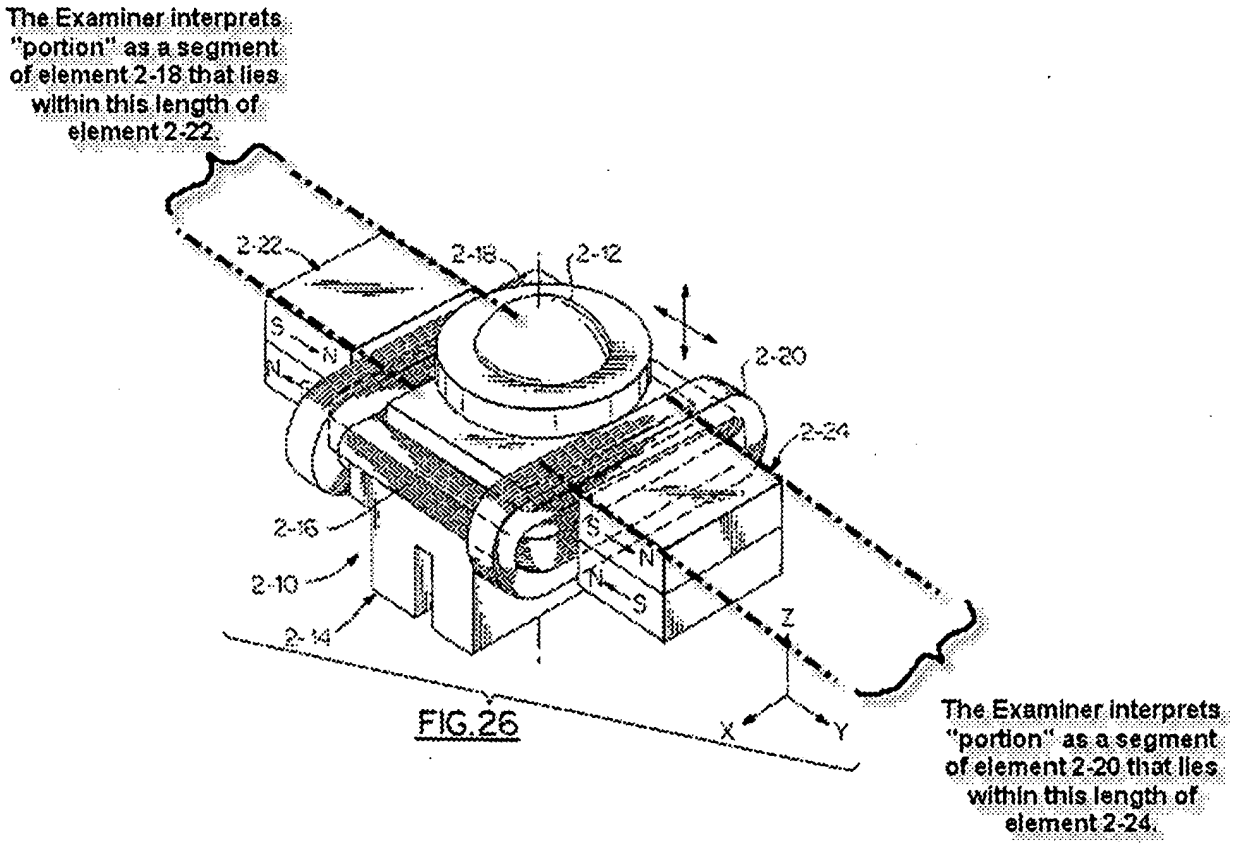
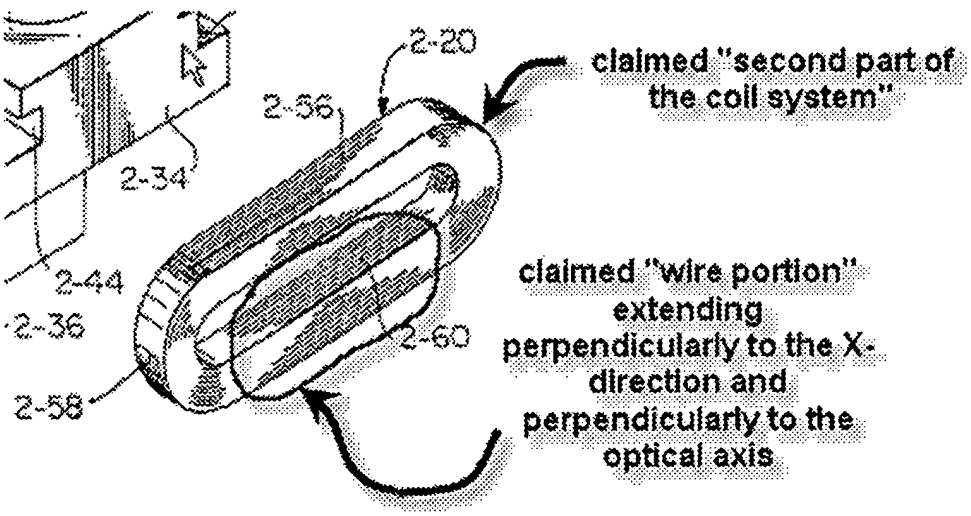


FIG.26

c. The Appellant argues on page 6, last paragraph that the rejection does not apply a reasonable interpretation of the term "entirely" contained within each of the appealed claims. In view of the above explanation, the Examiner maintains that the interpretation of the term "entirely" is reasonable.

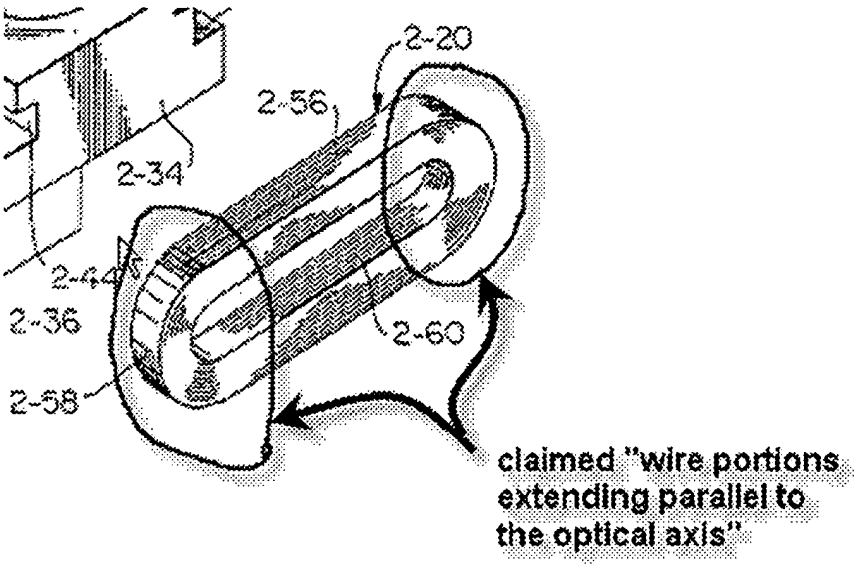
d. In regard to claim 4, the Appellant argues on page 11, paragraph 2 that Schell et al. do not disclose or suggest a coil system wherein the first part and the second part of the coil system each comprise at least an electric coil having a first part and a second part, which are provided with wire portions extending perpendicularly to the X-direction and perpendicularly to the optical axis. The Examiner disagrees. Figure 26 shows a coil

system (2-16, 2-18 & 2-20) having a first part (2-18) and a second part (2-20). The drawing below shows element 2-20 copied from Figure 27 of Schell et al.



The circled portion of element 2-20 corresponds to the claimed "wire portion". Directly above the circled portion is another "wire portion". Due to symmetry, the first part 2-18 also has the same wire portions. These wire portions clearly extend perpendicularly to an X-direction (corresponding to Y in Figure 26) and perpendicularly to an optical axis (corresponding to Z in Figure 26).

e. In regard to claim 7, the Appellant argues on page 13, paragraph 1 that Schell et al. do not disclose or suggest that the first part and the second part of the coil system each comprise at least one further electric coil from said portion having a first part and a second part, which are provided with wire portions extending parallel to the optical axis. The Examiner disagrees. The drawing below shows element 2-20 copied from Figure 27 of Schell et al.



The circled portions of element 2-20 correspond to the claimed "wire portions extending parallel to the optical axis". Note that the claimed "optical axis" corresponds to the Z direction shown in Figure 26. Due to symmetry, the first part 2-18 also has the same wire portions.

f. In regard to claim 7, the Appellant argues on page 13, paragraph 1 that Schell et al. do not disclose or suggest a "magnetizable part" for the magnetic system. The Examiner disagrees. The Appellant is directed to Figure 29 of Schell et al., which shows that the magnets 2-22 & 2-24 are attached to elements 2-110, which are iron plates, i.e., the claimed "magnetizable part", which are clearly situated next to the first magnet (2-22).

g. In regard to claims 2-20, the Appellant's arguments (see pages 10-21) are the same as those addressed by the Examiner in (a) thru (f) above.

(11) Related Proceeding(s) Appendix

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

Peter Agustin
Examiner Peter Agustin

01-18-2006

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